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Intelligence Memorandum

*The Effect of Price Inflation
on 1968 Soviet Expenditures for Defense and Space*

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
October 1968

INTELLIGENCE MEMORANDUM

The Effect of Price Inflation
on 1968 Soviet Expenditures
for Defense and Space

Summary

The major price revisions established by the USSR on 1 July 1967 probably account for a substantial portion of the large increases announced in the 1968 defense budget, as well as the science budget, which includes funds for military R&D and all space programs.

If the price changes are applied to CIA estimates of Soviet 1968 expenditures for defense and space that are in terms of previously established fixed prices, they indicate an inflationary effect of between 0.7 billion and 1.2 billion rubles, or between 4 and 6 percent of total expenditures. Price changes probably have increased 1968 expenditures for military construction and basic materials by about 330 million rubles and outlays for military equipment by between 410 million and 830 million rubles.

Note: This memorandum was produced solely by CIA. It was prepared jointly by the Offices of Economic Research and Strategic Research.

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Introduction

1. In December 1967 the USSR announced a defense budget for 1968 of 16.7 billion rubles, a pronounced increase over the 14.5 billion rubles announced for 1967. At the same time, it was announced that the science budget, most of which is used to finance military and space R&D programs, would increase by about 0.7 billion rubles in 1968. Although the announced budgetary data have limited utility for measuring the Soviet military and space effort because of their incompleteness and lack of detail, the reasons for major changes in announced expenditures such as the 1968 increase are important considerations in assessing actual trends in Soviet military and space programs.

2. In addition to funding genuine increases in military programs, the rise in the budget could reflect the transfer of defense-related expenditures from other budget categories to the explicit defense budget. No evidence of such transfers for 1968 has been uncovered thus far. A rise in the defense budget could also be explained by price increases. In July 1967 the USSR carried out a general revision of prices that appears to have significantly affected the prices paid by the defense establishment for materials, construction, and equipment.

3. This memorandum considers the available evidence on the nature of the mid-1967 price revision and its likely impact on the prices of military goods and services and estimates the effect on the CIA estimate of Soviet expenditures for defense and space in 1968.

General Features of the 1967 Price Revision

4. The mid-1967 revision of enterprise wholesale prices in the USSR was concentrated in the branches of heavy industry. As announced, the general features of this revision were: (a) sharp increases in wholesale prices for the products of branches producing raw materials, particularly the previously unprofitable iron ore and coal branches; (b) smaller but still sizable increases in prices for the products of heavy machinery branches where raw materials and

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other materials represent a large share of total costs; (c) still smaller price increases for products that require relatively few inputs of raw materials; (d) unchanged prices for machinery products as a whole; and (e) some reduction in prices for the products of such machinery branches as instrument manufacture, radio equipment, and electronics where raw material costs are a particularly small part of total costs.

5. The specific price changes announced by the USSR suggest that the cost to the military establishment of purchases of basic materials (such as construction materials and tires) increased and that the cost of food and clothing did not change significantly as a result of price changes. With respect to military hardware, the announced changes suggest that the cost of heavy equipment rose and that of highly sophisticated military equipment such as electronics and radar equipment probably decreased. In addition to the judgments that can be made from announced price changes, analysis of data on the profits of ministries producing machinery indicates that prices of military hardware probably rose significantly on the average, thereby boosting overall expenditures for equipment purchases.

Increase in Expenditures for Materials and Construction

6. The estimated net increase in 1968 defense and space expenditures resulting from price changes of basic materials and construction is considerable -- about 330 million rubles. This estimate is obtained by distributing the CIA estimates of Soviet expenditures on such categories for 1968 (in constant prices) among producing sectors and then multiplying the results by the announced price changes for corresponding product categories. The results are shown in Table 1.

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Table 1

USSR: Estimated Changes in 1968 Defense Expenditures
for Selected Commodities and Construction
Resulting from Mid-1967 Price Revisions a/

	Average Price Change (Percent)	Change in Expenditure (Million Rubles)
Construction	11	110
Lumber, wood, and paper products	26	80
Rubber products	12	50
Nonferrous metals	22	40
Construction materials	20	30
Ferrous metals	43	20
Processed foods	-4	-30
Other	9	40
<i>Total</i>		<i>330 b/</i>

a. The categories included account for 5.0 billion rubles of the total military-space expenditures of about 20 billion rubles estimated for 1968.

b. Based on unrounded data.

Increase in Expenditures for Military Equipment

7. The net increase in 1968 defense and space expenditures resulting from the changes in prices of equipment is estimated to be between 410 million and 830 million rubles. Uncertainty about much of the data used to calculate the price changes precludes a precise estimate, but it appears likely that the actual increase in expenditures would be closer to the high side of the range -- probably around 700 million rubles.

8. The most important inputs into the estimate of price changes are calculations of the profits -- before and after the price reform -- of ministries responsible for producing hardware. These profit calculations are derived from published Soviet data giving the profits earned by individual industrial

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ministries during varying periods. The published data list by name all of the civilian ministries producing basic materials, food, and clothing as well as all of the ministries producing primarily civilian-type machinery and give total ruble profits for each ministry. Eight defense-related ministries plus several others are omitted, but the profits earned by them can be obtained by subtracting the profits of listed ministries from total industrial profits.

9. The comparison of profit data for the first five months of 1967 and the first five months of 1968 (before and after the price reform) in Table 2 shows: (a) increases in profits in ministries producing basic materials, food, and clothing consistent with what is known about the mid-1967 revision of wholesale prices; (b) a 6 percent decrease in profits of the listed (civilian-oriented) machinery ministries; and (c) an 18 percent rise in profits of the residual category, which includes the ministries responsible for producing military hardware -- Defense Industry, Aviation, General Machine Building, Medium Machine Building, Ship Building, Radio Industry, Electronics Industry, and Machine Building. Compared with comparable periods in 1966 and 1967, the divergent behavior of profits in the civilian-oriented machinery sector and the residual sector following the price reform is striking.

10. If production costs and gross output increased in both the identified group of ministries and the residual group of ministries to the same extent, then the divergent profit behavior for the two groups would reflect divergent changes in the average prices of their products.* The increase in total production costs for the products of the machine building and metalworking sector as a whole can be estimated by applying what is known about price increases for fuel, power, and materials and trends in labor productivity and wages to the input structure of the 1959 Soviet input-output table.

* *It is not likely that other factors, which conceivably could account for some of the divergent profit behavior, would have more than a negligible impact.*

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Table 2

USSR: Growth in Profits in Industry

	First Six Months of 1967 Compared with First Six Months of 1966		First Five Months of 1968 Compared with First Five Months of 1967 a/	
	Absolute Growth (Million Rubles)	Percent- age Growth	Absolute Growth (Million Rubles)	Percent- age Growth
Total industry	2,929	25	5,655	48
Ministries producing basic materials	677	23	4,587	153
Ministries producing textiles, food, and clothing	1,152	35	626	18
Ministries specializing in civilian machinery	499	24	-131	-6
Residual (including ministries specializing in military hardware)	601	19	583	18

a. Data on profits for the first six months of 1968 are not available.

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11. To obtain a base estimate of the average price increase for the residual group (military-space products), it was assumed that: (a) production costs in the residual sector rose the same as estimated for machine building and metalworking as a whole (10 percent); (b) the profit margin in the residual group before the price reform was the same as that for machine building and metalworking as a whole (16½ percent); and (c) gross output in the residual sector increased at the same rate as machine building and metalworking as a whole (12 percent). On this basis the average price increase for the residual group necessary to achieve the reported increase of 18 percent in profits is calculated to be 9 percent. This price increase, when applied to the current estimate of 1968 military-space hardware purchases from machine building and metalworking (8.1 billion rubles), results in additional outlays of about 730 million rubles. Experiments with plausible alternatives to the underlying assumptions on production costs, profit margins, and output, however, suggest that the calculated rise in prices of military-space equipment (9 percent) is more reliably estimated as a range of from 5 to 10 percent. The resulting increase in expenditures for purchasing military-space hardware then falls in the range of between 410 million to 830 million rubles.

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